

Title (en)

Superabrasive cutting element with enhanced stiffness, thermal conductivity and cutting efficiency

Title (de)

Superhartes Schneideelement mit verbesserter Steifheit, Wärmeleitfähigkeit und Schneidleistung

Title (fr)

Élément de coupe extra-dure avec rigidité et capacité de transfert de chaleur et efficacité de coupe accrues

Publication

EP 0853184 A3 19981216 (EN)

Application

EP 98300256 A 19980114

Priority

US 78317197 A 19970114

Abstract (en)

[origin: EP0853184A2] A cutter for use on a rotary-type drag bit for earth boring is provided comprising a substantially rectangular diamond table attached to and supported by a substrate. A plurality of rod-like diamond pilings made of polycrystalline diamond is carried in the substrate, extending from the cutting face of the diamond table, through the diamond table, and into the substrate material. The diamond pilings are generally arranged in a mutually parallel configuration substantially transverse to the plane of the diamond table, and the forward ends of each diamond piling may coextensively terminate at the cutting face of the diamond table, may terminate within the diamond table, or may merely abut the rear of the diamond table. Further, the diamond table may be of smaller size than the transverse cross-section of the substrate, and at least a portion of the periphery of the substrate may then be forwardly and inwardly tapered to provide structural support to the diamond table.

IPC 1-7

E21B 10/56

IPC 8 full level

E21B 10/56 (2006.01); **E21B 10/567** (2006.01)

CPC (source: EP US)

E21B 10/5676 (2013.01 - EP US)

Citation (search report)

- [A] US 5205684 A 19930427 - MESKIN ALEXANDER K [US], et al
- [A] US 4705123 A 19871110 - DENNIS MAHLON D [US]
- [A] WO 9704209 A1 19970206 - US SYNTHETIC CORP [US]
- [A] EP 0032428 A1 19810722 - DRILLING & SERVICE UK LTD [GB]

Cited by

GB2453472A; GB2453472B; WO0036264A1; WO2008006010A3

Designated contracting state (EPC)

AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

EP 0853184 A2 19980715; EP 0853184 A3 19981216; GB 9800674 D0 19980311; US 6009963 A 20000104

DOCDB simple family (application)

EP 98300256 A 19980114; GB 9800674 A 19980114; US 78317197 A 19970114